DGDC Meeting Minutes
November 8, 2012

Attendance List:

Bruce Allen	DelDOT
Cheryl Alt	URS
Roger Barlow	USGS
Mark Biddle	DNREC
Kim Cloud	DTI
Jonathon Crist	City of Wilmington
Avery Dunn	DNREC
Jeremy Gibb	City of Dover
Barbara Gladders	DPH
Glenn Gladders	DE Forest Service
Rich Goodman	DNREC
Jim Hoff	Dover AFB
Kevin Holmes	US Census
Sandy Janowski	New Castle County
Brianne Jordan	Pepco Holdings
Matthew Laick	DSHS
Danielle Lamborn	Kent County
Matt Layton	URS
Erica McMaster	Washington College
Ben Mearns	UD
Dorothy Morris	OSPC
Matthew Ng	DelDOT
Miriam Pomilio	OSPC
Sandy Schenck	UD - DGS
Rick Steffers	City of Wilmington
Bill Stephens	SECI
Deborah Sullivan	DNREC
Josh Thomas	DelDOT
Mike Townshend	DNREC
Art Walker	USDA/NRCS
Lillian Wang	UD – DGS
Carl Yetter	DNREC

Welcome & Introductions

Miriam Pomilio started the meeting at 9:05 am. She welcomed everyone to the meeting and introductions were made.

Approval of May 2012 Meeting Minutes

Josh Thomas made a motion to approve May 19, 2012 meeting minutes (PDF) as presented. Mark Biddle seconded the motion and it passed, unanimously.

Regional GIS Conferences

ESRI International Users Group – Matt Laick stated that he attended the conference. He noted that while he followed the Safety and Homeland Security track, there was something there for everyone. Sussex County won a Special Achievement in GIS award at the conference.

MACURISA – Nicole Minni presented at the MACURISA conference on the WeTable Land Use planning efforts Delaware is undertaking. Roger Barlow also presented at MACURISA. He noted that there was a lot of good information presented. There were many discussions about addressing and parcels. As the conference was in Atlantic City, New Jersey gave updates on all their current GIS initiatives.

NSGIC – Miriam indicated the NSGIC Annual conference was held in September and that Kim Cloud attended. NSGIC has quite a few "For The Nation (FTN)" initiatives; Addressing FTN, Transportation FTN, Imagery FTN, etc. Miriam indicated that the Addressing For The Nation will be of interest to Delaware as we pursue addressing standards in the coming months. Miriam asked Roger about USGS's focus in the coming years. Roger noted that the USGS would be moving its focus to topography and hydrology. A discussion followed about the funding that has been available through USGS for our ortho imagery. He further stated that the money budgeted for orthos will go to NAIP which is a leaf-on product at 1 meter resolution. This doesn't meet Delaware's needs. Miriam asked if that meant Delaware would no longer get the financial assistance and Roger confirmed that the help could diminish but he urged Delaware to look for other partnerships to help obtain the data needed.

Roger also discussed that USGS has published their first non-draft national standards for LiDAR. NSGIC.org has additional information on these standards.

ESRI Mid- Atlantic User Conference - This conference is scheduled for December 11 and 12 in Baltimore. Miriam will be on a panel of State governments and will report back about the conference at the next meeting.

2012 Ortho-imagery

Miriam stated that the 2012 imagery has been received. DTI has set up an image service:

1. To connect to the service through ArcCatalog/ArcMap, do the following:
2. Add ArcGIS Server
3. Select 'Use GIS Services'
4. Enter http://broadband.delaware.gov/arcgis/services in the Server URL
5. Click Finish

Kim Cloud wants to remind everyone that this is a *Beta Testing site* at this point so if anyone has any issues with using the site, they should contact her. Mike Townshend indicated that DNREC also put up an image service for in house use at this time. It was originally set up to allow for review of the 2012 ortho-imagery.

Miriam stated that she has 2 hard drives with the imagery and that it is currently GeoTIFFs and not MrSID. It is hoped that this imagery would be served via DTI but if there is a need for agencies to store this data locally, they can contact the Office of State Planning to set up delivery.

The majority of the funding for the 2012 imagery was courtesy of a Broadband Mapping grant through DTI. In order to include the New Castle County portion, several agencies set aside funding. Miriam has spoken to USGS and expects the invoice the state soon. DTI is managing this contract, so expect invoicing from DTI for this in the near future.

Sandy Schenck stated that there is a trick to getting the infrared images. If anyone needs to determine how to do this, they can contact Sandy.

Bruce Allen asked if they we going to be converted to MrSID and Matt Laick stated he is in the process of getting that done.

Hurricane Sandy Flights

Roger Barlow stated that the Civil Air Patrol has flown the Delaware coastline since Hurricane Sandy. These images are oblique's and not geo-rectified. The imagery is available from the USGS Hazards Data Distribution Site (http://hdds.usgs.gov/hdds/). He encouraged everyone to go on the site and take a look at the images available for download. Roger did not think they flew Delaware Bay.

ESRI Discovery Workshop

Miriam discussed that ESRI met with the State agencies and did an assessment of where the larger state agencies are with GIS coordination. They then met with the Cabinet Committee to discuss how the State could move forward in terms of GIS coordination. After meeting with the CCSPI it appears that the State will contract with ESRI to develop a system architecture design for GIS data consolidation.

The second phase will be to set up ArcGIS Online portal for the State and provide templates to the users.

Miriam explained that a group of the agencies met and revised the 2010 Business Plan to reflect the current climate for geospatial coordination. The Business Plan suggests a Geospatial Coordination Team comprised of two staff (through reallocation and/or re-classification of existing positions). That Business Plan is currently on hold until more information is gathered.

The Cabinet Committee will meet again on November 27, 2012 to discuss the ESRI proposal further.

Sandy Schenck asked if the final product from ESRI would be different than the data exchange. Miriam noted that it will enhance the existing exchange. Sandy asked if it will include a catalog. Kim stated that the function of the portal will be to house the data. Each user can get the data and determine how they can use it.

Miriam stated that the first thing ESRI would do was give the State the needed system requirements so we could determine cost and then DTI will build the system.

Josh Thomas noted that ARCGIS on-line can be used as a viewer as well. He also noted that this might be a good time to merge the DataMIL and the Data Exchange.

Bruce Allen asked if funding was available for all the phases and Miriam stated that they are hoping to work the funding through the existing ELAs.

Kim Cloud stated that DTI will ramp up the training services of the ELA with hopes that once the system is in place they can lower the service side.

Miriam reminded everyone that the CCSPI meeting is November 27, 2012 at 2:00 in the Haslet Armory.

ACTION ITEM: CCSPI to meet and approve Activity 1 of the ESRI Proposal from the Discovery Workshop.

Action Items

Land Use Land Cover Data for 2012

Miriam stated that an RFI was completed for the Land Use Land Cover data and the approximate cost to update the 2007 will be between $80,000 and $120,000, with the $120,000 including impervious cover. Miriam stated that if anyone is interested in helping with funding, to please let her as soon as possible. She is hoping to do an RFI in January.

Mark Biddle noted that having to "pass the hat" every time money is needed is further proof that we should support the GIS Coordination efforts.

ACTION ITEM: Agencies need to ask if there is funding available that they can put towards creation of the Land Use Land Cover (LULC) dataset from the 2012 Imagery.

Dedicated Future Funding Account for Ortho-Imagery, LULC, LIDAR

Josh Thomas explained that to date any time money is needed for data collection, agencies have had to "pass the hat". This is not the best practice because the State is not getting the most for its money.

Josh has drafted a timeline (see handout) which outlines the ideal timeline for data gathering. Josh indicated it would be best to determine the specifics needed for each data set so and RFI can put out to get the cost for a 6 - 10 year schedule. The hope is to save money by bundling everything into a set schedule. Once all the specification are determined with input from all the interested agencies, then specific funding needs will need to be scheduled.

The members of the DGDC discussed many aspects of this plan. It was decided that Josh Thomas and Sandy Schenck be the lead members for fleshing out the scope of work and specifications for the various datasets. After the specifications are determined an RFI will be generated to determine the cost of data over the selected schedule and money will be allocated in some fashion (yet to be determined) so that these data can be generated for the State.

Roger Barlow encouraged the group to find partnerships with the Feds for funding opportunities and noted that USGS can still contract for the States as a way of saving money.

For now, Josh asked that each member go back to your agencies and determine what specifications are needed by your agencies so that the information is ready for the upcoming meeting. He also suggested each person begin marketing the 10 year approach to your directors so they know what the group is trying to accomplish.

ACTION ITEMS:

- **Representatives from OSPC, DelDOT, DSHS, DTI and DNREC meet to flesh out the minimum requirements for each dataset.**
- **Workshop will be held with all other interested data users to determine if there are additional specifications that should be considered and requested in an RFI.**
- **Prepare and RFI for Cost Estimates and "bundling options" for Data.**
- **Determination of Agencies can provide funding for these data**
- **Develop a Marketing Plan to be presented to the DGDC Executive Council and the Cabinet Committee on State Planning Issues.**

County Boundaries

Miriam stated that an agreement has been reached between the Counties and a boundary line is now available for the three counties in the Geospatial Data Exchange. This now the official agreed upon County boundaries for Delaware. Please download this dataset and use it for all future mapping needs (https://dataexchange.gis.delaware.gov/).

Subcommittee Reports

GIS Day – Nicole Minni is the new chair of this committee. Although Nicole was not present, Miriam provided an update. The Annual GIS Day Field trip for 5th grade students is scheduled for November 14, 2012. Miriam noted that we have a lot of GIS professionals volunteering to assist with the field trip and a special thank you to the USAF for sending many volunteers.

GIS Conference – Sandy Janowski, Conference Chair, noted that the next Delaware GIS Conference is scheduled for May 8, 2014 at the Sheraton in Dover. She mentioned that they are in the beginning stages of planning. Sandy also mentioned that there are several ways to keep up with the planning: Like us on Facebook (Delaware GIS 2014) and at our conference website: http://degis.org.

Transportation – Bernie Gilbert from DelDOT was not present so there was no update at this time.

GIS In Education – Nicole Minni is chair of this committee. Although Nicole wasn't present, Miriam gave an update. The Department of Education has recently signed an ELA agreement with ESRI and now GIS software is available to every public and private school in Delaware along with their districts for administrative use. Miriam reported that the next meeting for this subcommittee is Nov 16th. The focus of this committee is on K-12 and promoting the use of geospatial technologies to the students.

Technical Infrastructure – Kim Cloud, Chair, indicated she is undertaking a Gap Analysis between DataMIL and the Data Exchange. She will be calling a meeting of this subcommittee in the near future. It is open for new members so please let Kim know if you're interested in joining the subcommittee.

ACTION ITEM: Kim will be setting up a meeting for the subcommittee to discuss next steps.

GIS Data Standards – A group met regarding the Metadata standard. The group discussed the changing standards from FGDC, ISO, and further discussed the ESRI approach to metadata in their software. It was decided to take a "wait and see" approach before making any changes to this standard for now.

Addressing – Miriam indicated that the OSPC has entered into a contract with the University of Delaware IPA group to facilitate the development of an Addressing Standard for Delaware. Miriam noted that the approach is to first meet with the data stewards and those agencies employing geo-coding solutions to determine base line information and background. The UD/IPA group has met with John Laznik, Matt Laick and Mike Townshend so far to get their input on the geocoding aspects of this dataset. The next step is to meet with each of the Counties since they are the ones that assign addresses. A facilitate workshop will be held in January to get input from all the Addressing stakeholders to move towards a statewide Addressing database using the County data. One of the end goals for this standard is to have a base dataset that can be used for a geocoding application (to be built or purchased) for all agencies to utilize. Kevin Holmes from US Census indicated there is a 50 Counties Project being undertaken at this time and that Sussex County was the county chosen to participate from Delaware. He will keep us posted on this project as it progresses.

ACTION ITEMS: Miriam and IPA need to meet with all 3 counties then set a workshop for January and announce to all interested stakeholders.

Federal Update

There were several Federal agencies present at the meeting and below is a summary of their updates:

USDA/NRCS – Art Walker indicated that the Soil data has been updated to clean up sliver polygons along the state boundaries. A Soil Survey App has been created by USDA, it's called SoilWeb and it's a free App.

USAF – Jim Hoff indicated that he has many air force employees who need volunteer hours so if there are GIS related activities (such as going into schools, GPS activities, etc.) that you have a need for assistance please contact him.

US Census – Kevin Holmes reported that the American Community Survey (ACS) 2011 1-year estimates were released in September, 3-year estimates were released in late October, and 5-year estimates are expected for release in early December. Census Geography shapefiles and geodatabases are now available via the Census website that come pre-joined with select population & demographic datasets. Now you don't have to bother pulling datasets from American Fact Finder and doing a lot of manipulation/joining. The Geographic Support System Initiative is getting underway in FY13 with 50 pilot entities throughout the US, of which one is expected to reside in DE. The GSS-I is the intercensal geographic partnership update program, utilizing locally provided address and/or feature network data to maintain data quality and help support a potential targeted address canvassing in 2019. Updates will be provided on the GSS-I pilot program in DE as it develops. And finally, Kevin reported the 2013 BAS should be getting underway later next month, so the Census would like to be informed of any recent boundary changes. Kevin will let the group know when the kickoff occurs.

USGS – Roger Barlow indicated that Delaware may qualify for funding for new LiDAR due to storm damage from Superstorm Sandy due to the age of our existing LiDAR. Roger also mentioned that there is an upcoming National Hydrograhy Data (NHD) training coming up December 13-14 in Baltimore. Imagery funding from USGS will be diminishing in the future. USGS has decided to put their funding towards the NAIP imagery. The LiDAR standard from USGS is no longer a draft document.

Sea-Level Rise Presentation

Carl Yetter from the DNREC Coastal Programs section provided a slide presentation updating the committee on their Sea-Level Rise Project. A copy of this presentation is attached.

Roundtable Reports on GIS Projects

City of Wilmington – Rick Steffers indicated they are working with ArcGIS Online for their municipality.

New Castle County – Sandy Janowski reported that New Castle County is updating their floodplain maps. They are also creating a Flex map to show areas by address.

DTI – Kim Could reported that DTI still has ESRI Virtual Campus Dollars available for users to access online training. Contact Kim for more information.

Dept. of Safety and Homeland Security – Matt Laick reported that they are rolling out ArcGIS Online applications for the Delaware State Police.

University of Delaware – Ben Mearns reported that the University is now utilizing ArcGIS Online in various courses.

Delaware Geological Survey – Sandy Schenck reported that the DGS is undertook a user survey about stakeholder data and a needs assessment. Sandy indicated that from that survey it was found that Topographical maps and Base Maps are extremely important.

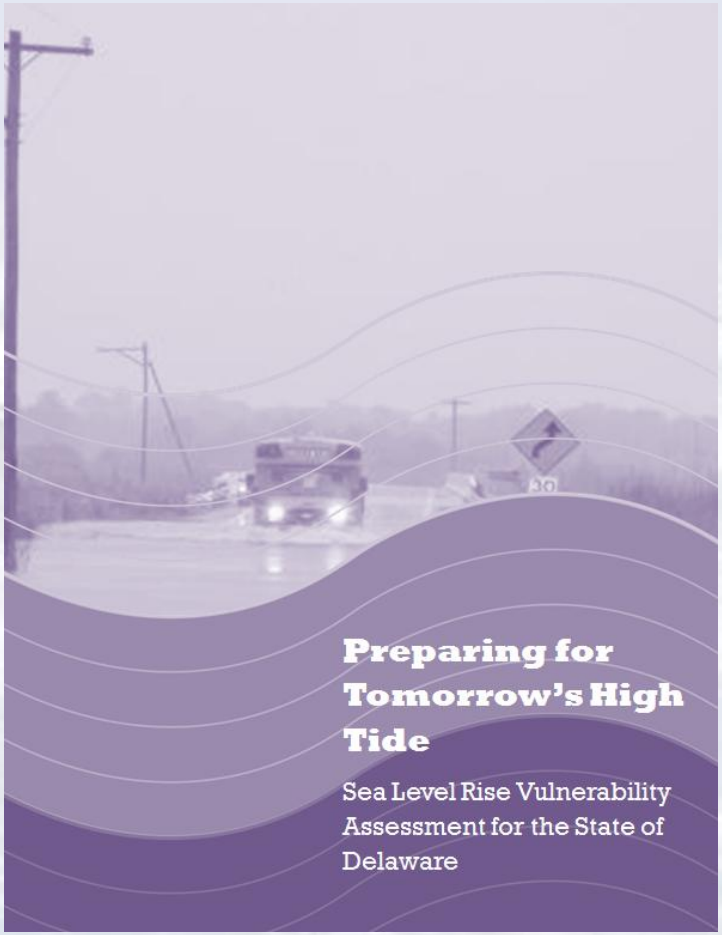
DelDOT – Matthew Ng reported that they are working with ESRI for an educational development plan for their employees. Josh Thomas reported that DelDOT continues to work towards moving their Official DelDOT Map to a GIS base.

Adjournment

The meeting was adjourned at noon.

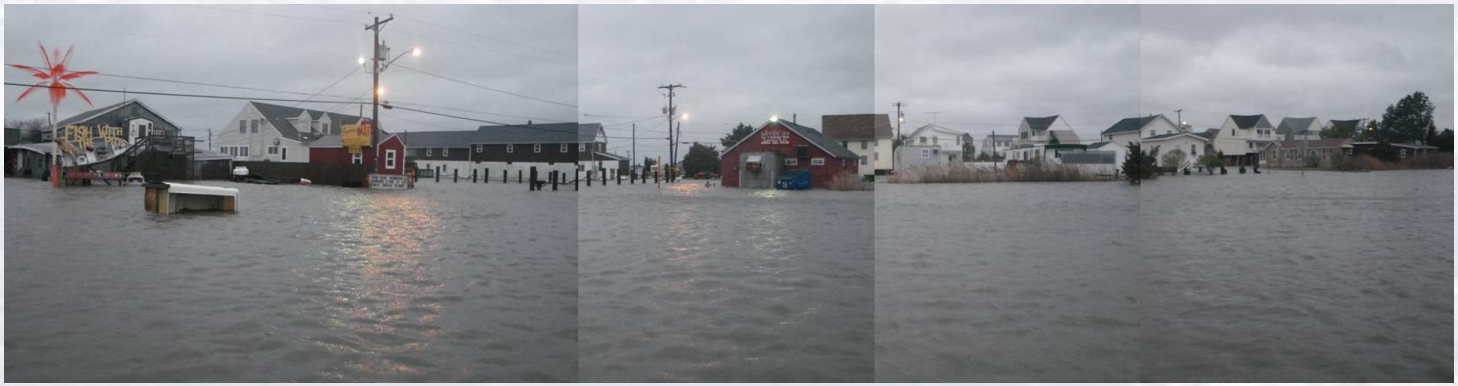
Results of Delaware's Sea Level Rise Vulnerability Assessment

Presentation for DNREC Staff
June 26 & 27, 2012



Overview

- Re-cap sea level rise rates, future scenarios and importance of planning
- Highlights of statewide vulnerability assessment and local examples
- Next Steps



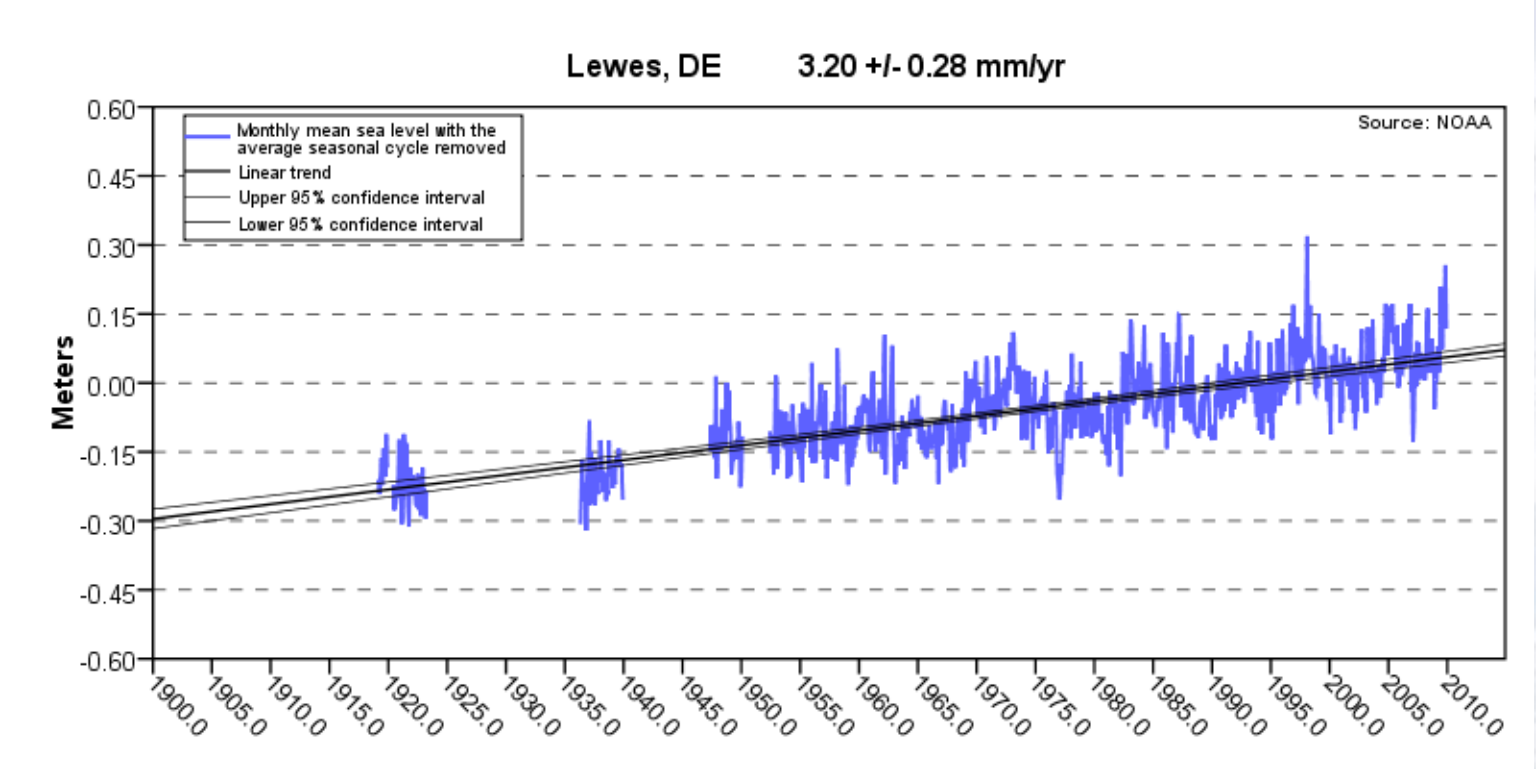
Sea Level Rise

- Increase in average tide height over time as a result of:
  - ✓ Thermal Expansion
  - ✓ Melting of glaciers & ice caps
- Influenced locally by *subsidence*

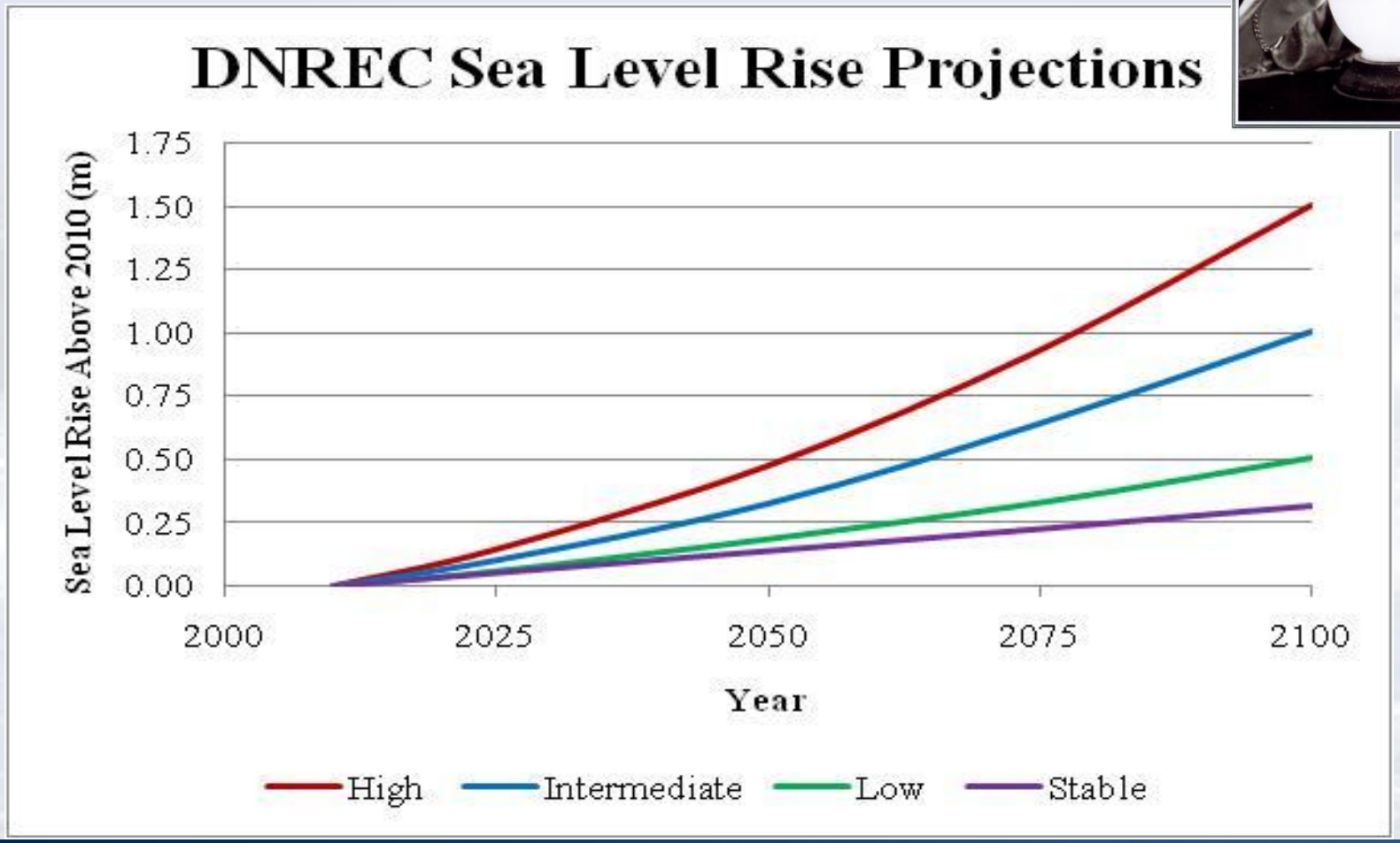
Measured Sea Level Increase @ Lewes, DE

Global rate = 1.7 mm/yr (6.7 inches/100 years)

DE Rate = 3.35 mm/yr (13.2 inches/100 years)



Rates of SLR are very likely to accelerate in the future



Potential Impacts of Sea Level Rise

- Permanent inundation of land and infrastructure
- Increased extent & severity of periodic flooding
- Saltwater Intrusion
- Secondary economic, environmental & social Impacts

Odessa, October 16, 2009

Storm Flooding and SLR are interrelated

- DNREC SLR Scenarios within range of current storm surge
  - ✓ '62 Storm, Lewes – 4.5 ft
  - ✓ '08 Mother's Day Storm, Bowers – 4 ft
  - ✓ '09 Veteran's Day Storm, Lewes – 3 ft
- Measures to adapt to SLR long term will help prepare for temporary effects of storm surge
  - ✓ And vice versa

Planning for Sea Level Rise

- Land use & public works decisions have long life-span
  - ✓ Wise use of public funds and reduction of future risk
  - ✓ SLR rarely a consideration in project planning currently
- Minimize storm impacts
- Delawareans support it
  - ✓ 76 % think SLR will impact their area in 100 years. 14% say it already is
  - ✓ Of those, 80% say we should ***take action before impacts occur***

DNREC's Sea Level Rise Policy

Communicate, Consider & Conduct…

- **Communicate** the message
- **Consider** the effects of future SLR and lead by example
  - Planning
  - Project siting and construction
- **Conduct** vulnerability assessments
  - 12-18 months

Sea Level Rise Advisory Committee

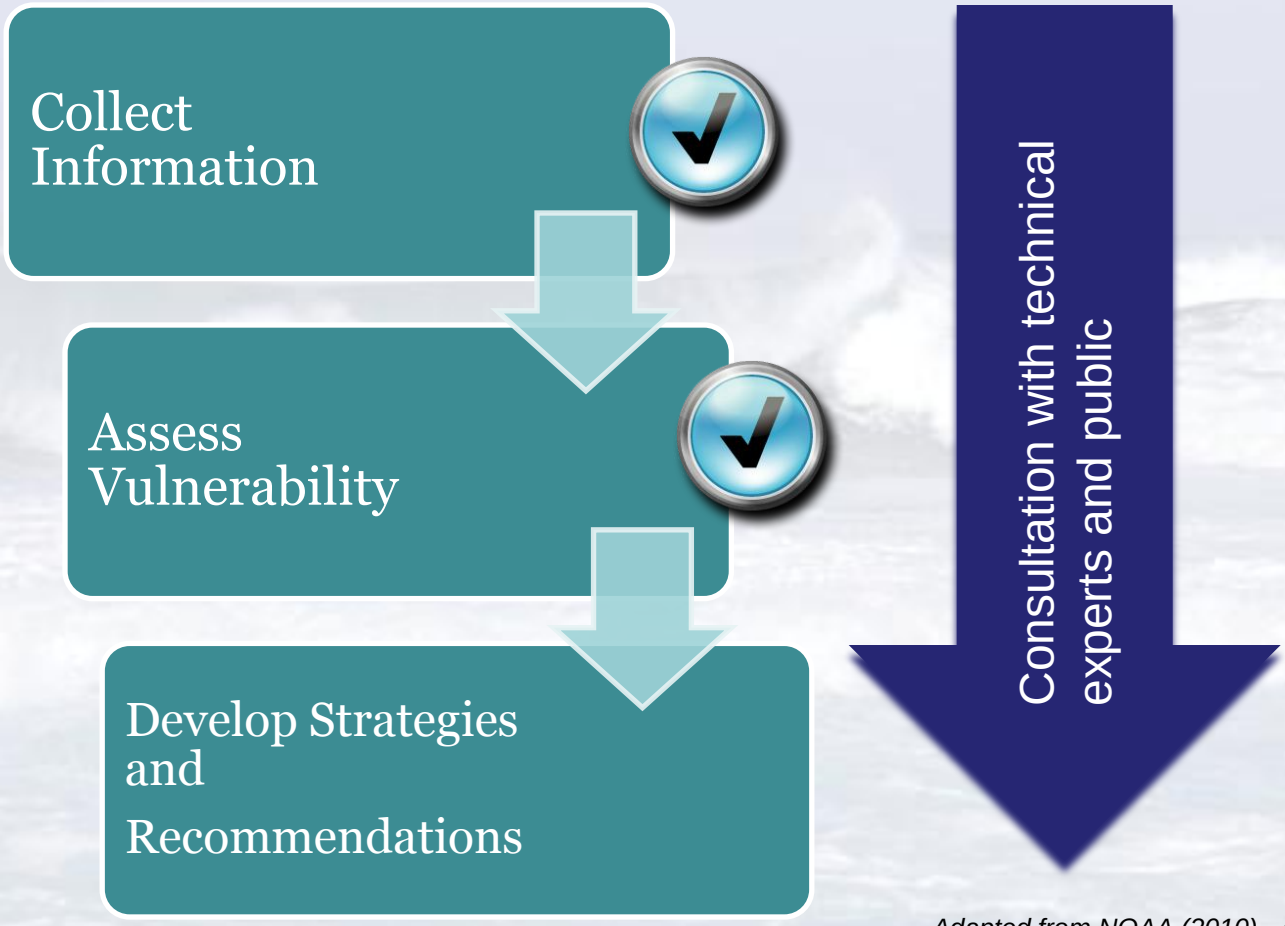
The goal of the Sea Level Rise Advisory Committee is to assess Delaware's vulnerability to current and future inundation problems that may be exacerbated by sea level rise and to develop a set of recommendations for state agencies, local governments, businesses and citizens to enable them to adapt programs, policies, business practices and make informed decisions.

Adaptation Planning

"Adjustments in natural or human systems in response to actual or expected climactic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (IPCC)

Adjusting to the new normal

Steps to an Adaptation Plan

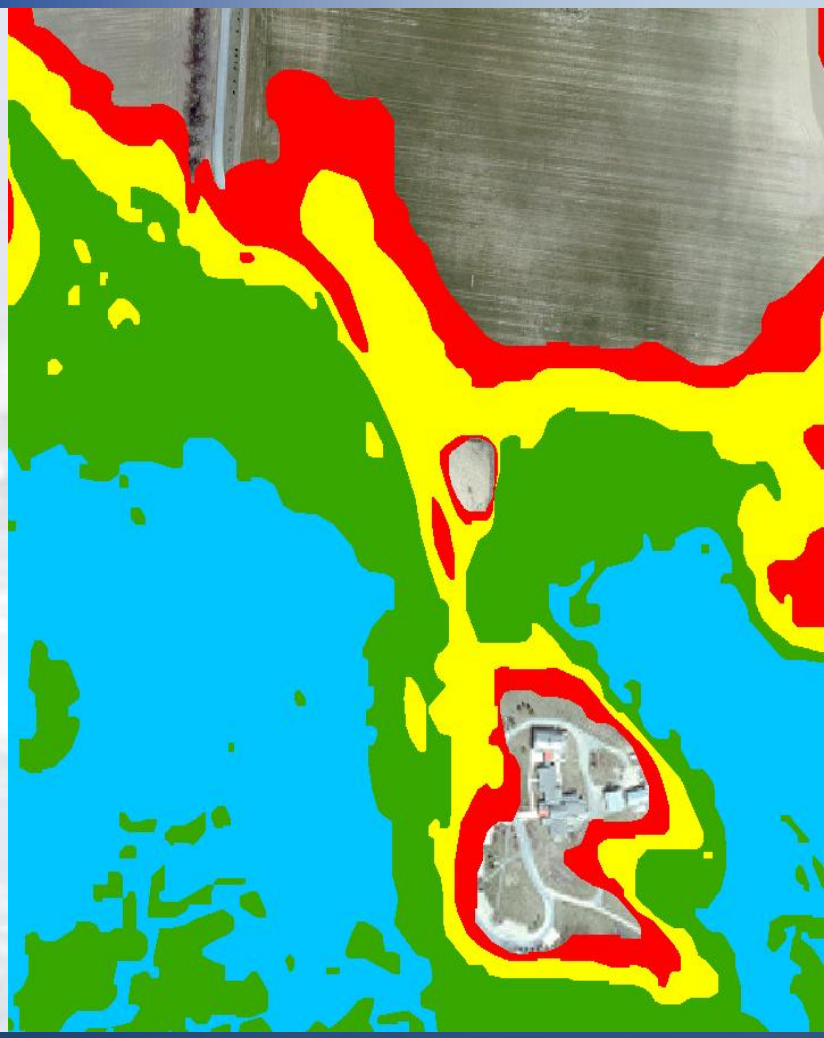


Adapted from NOAA (2010). Adapting to climate change: a planning guide for coastal managers

Sea Level Rise Scenario Maps

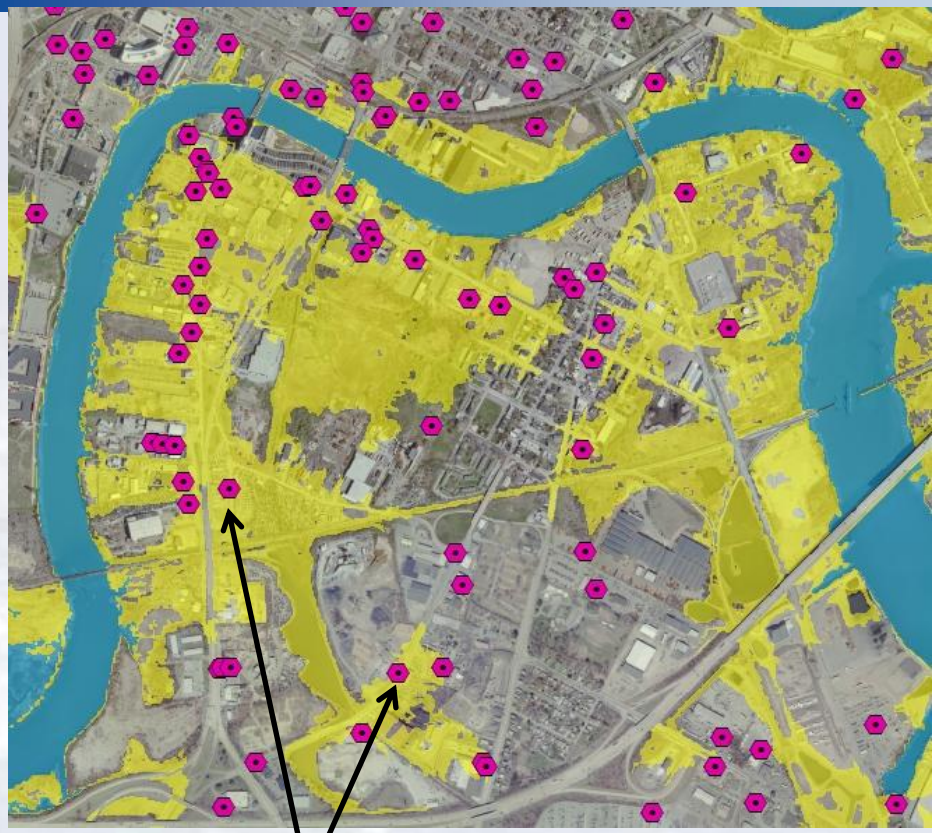
DNREC Planning Scenario Maps

- ✓ Bath-tub Model – does not account for future changes in shoreline or elevation
- ✓ High resolution aerial photography (LiDAR)
- ✓ For planning purposes only



Determining Vulnerability

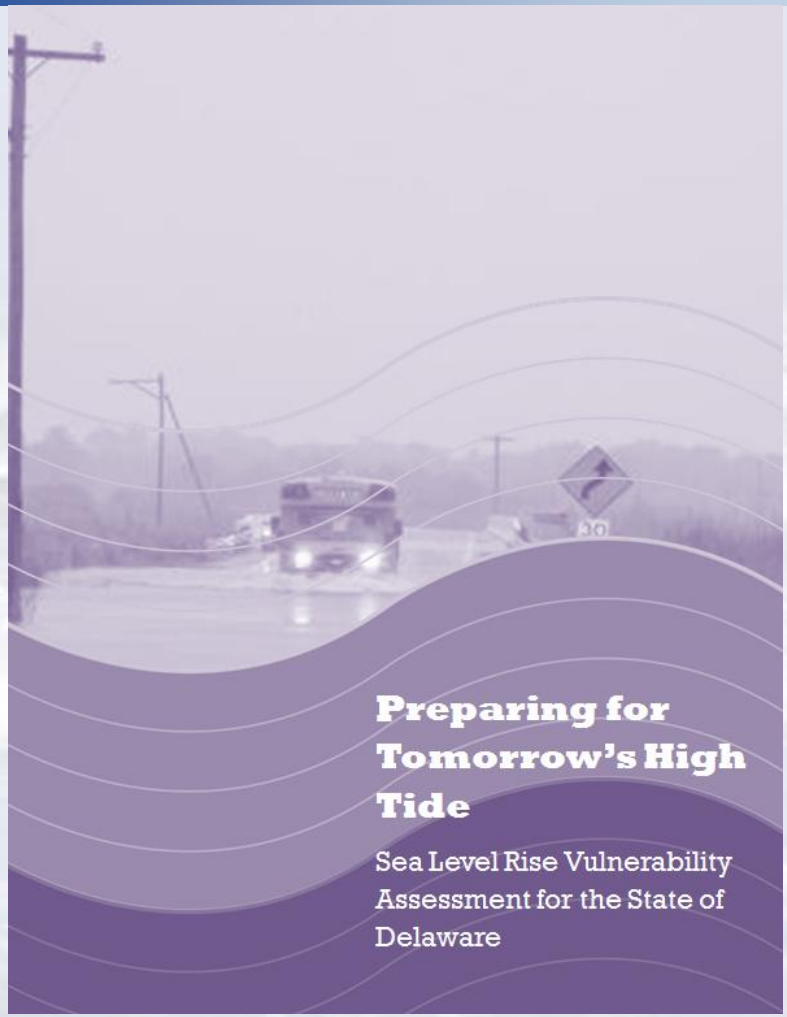
- Exposure Analysis
  - ✓ Quantitative assessment
  - ✓ Numbers and locations of resources potentially inundated were identified
- Impact Assessment
  - ✓ Qualitative
  - ✓ Direct and secondary social, economic and environmental impacts
- Risk Assessment
  - ✓ Qualitative finding
  - ✓ Based upon geographic extent of exposure and geographic extent of impacts



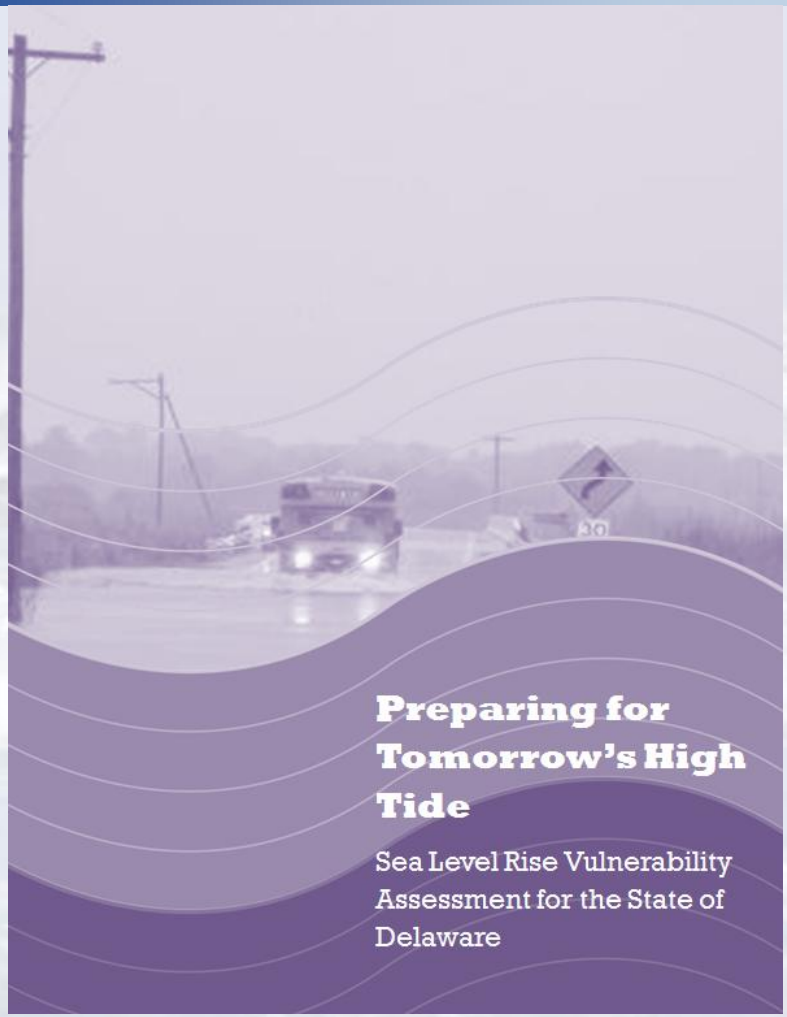
Potential Exposure of Underground Storage Tanks at 1.0 meter sea level rise

Vulnerability Assessment: Results

- Potentially Inundated
  - ✓ 8-11% Total Land Area
    - ***Tax assessed value $1.5 B***
  - ✓ Direct effects in all counties and 31 towns
- Of highest concern statewide:
  - ✓ Industrial Areas and Port
  - ✓ Railroads, roads and evacuation
  - ✓ Dams and Dikes
  - ✓ Future development areas
  - ✓ Tourism/coastal recreation
  - ✓ Habitats and protected lands
  - ✓ Wells



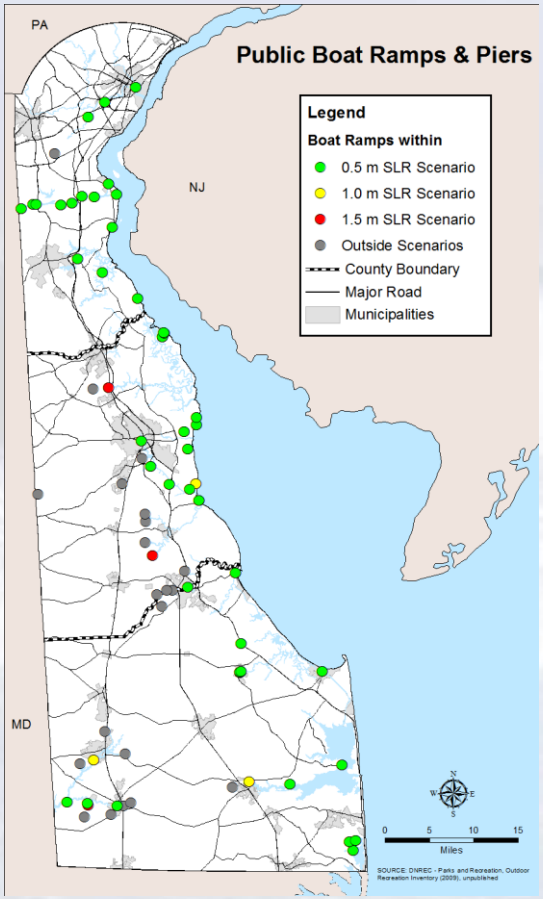
Vulnerability Assessment: Results

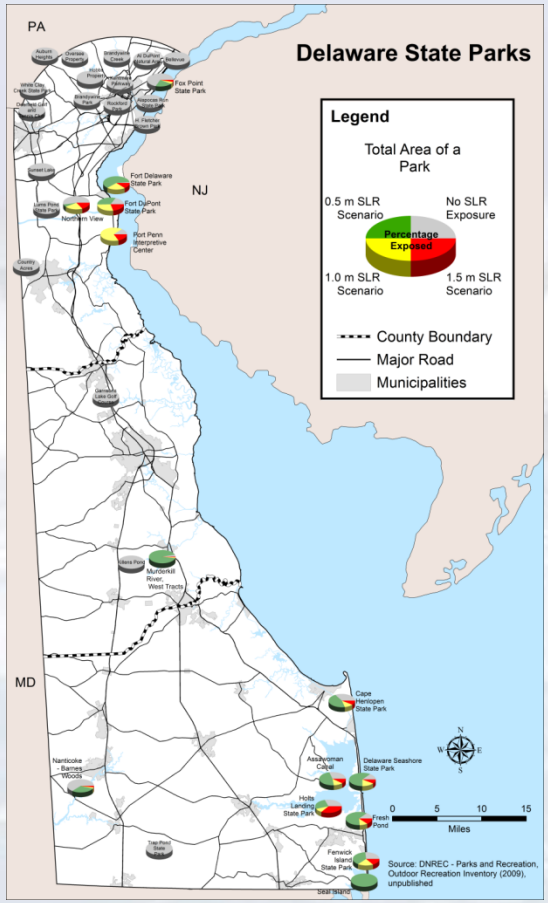


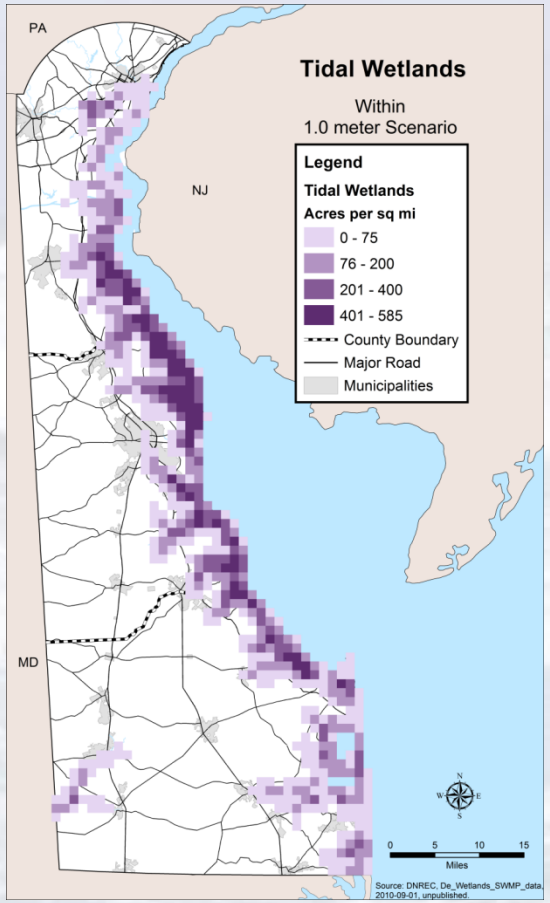
Example Data Table

Land Area							
County	Total Acres	Acres Inundated by SLR Scenarios			Percent of Total Inundated by SLR Scenarios		
		0.5 m	1.0 m	1.5 m	0.5 m	1.0 m	1.5 m
State	1,385,495	110,497	133,531	151,528	8%	10%	11%
New Castle	278,754	25,179	29,916	33,148	9%	11%	12%
Kent	510,428	50,095	57,784	63,269	6%	11%	12%
Sussex	596,314	35,223	45,831	55,111	6%	8%	9%
Source: USGS and Delaware Geologic Survey, State Outline (Area), 2007-04-01							

Example Point and Grid Maps







Vulnerability Assessment: Results

Score	Impact		Geographic Scope	Recommended Action
High Concern	Resource does not function or meet its intended use	And/or	Statewide	Develop adaptation strategies
Moderate Concern	Major loss of function or some failure of intended use	And/or	County-level	Evaluate further and develop adaptation strategies if necessary
Low Concern	Resource functions with modifications	And/or	Localized	Monitor and re-asses in future years
Minimal Concern	minor or no impact to function	And/or	Isolated	Re-asses in future years

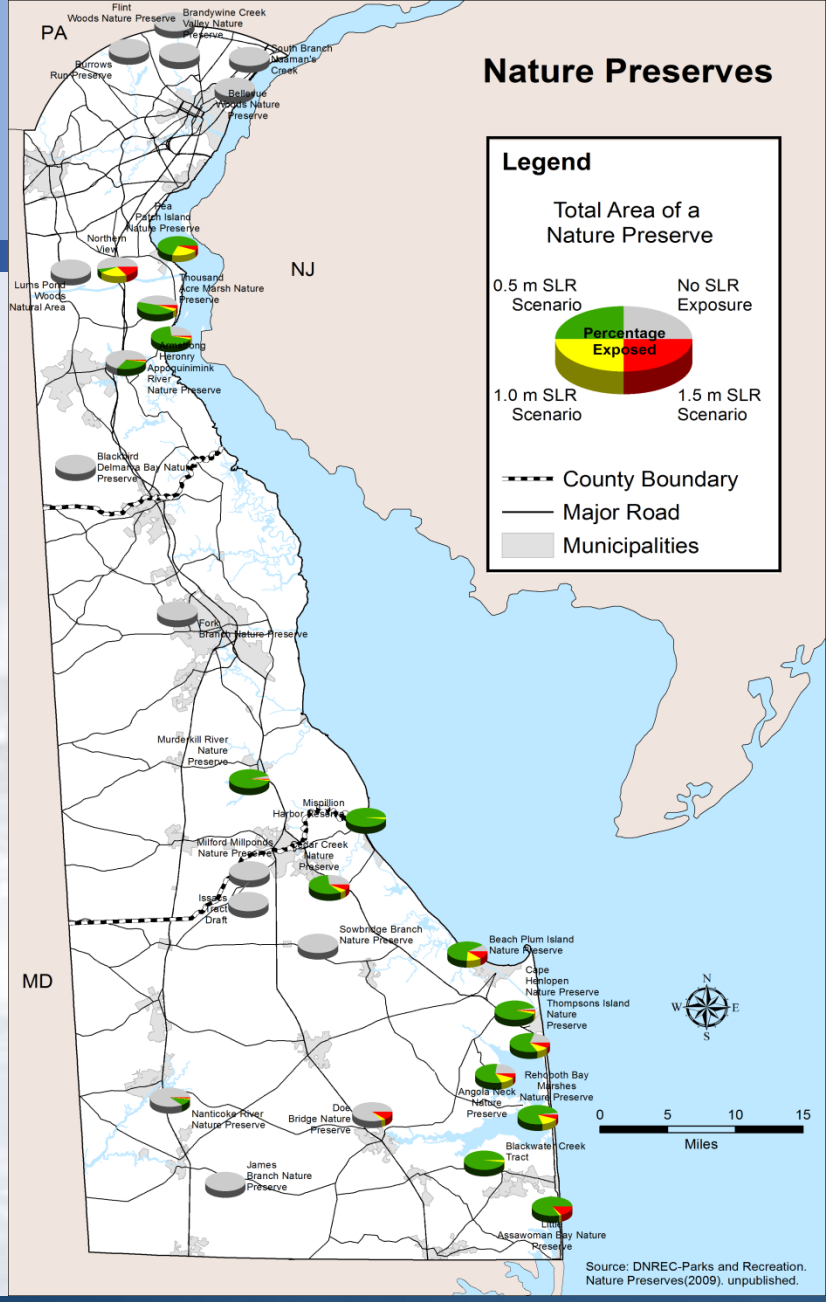
Vulnerability Assessment: Natural Resources Chapter

High Concern	Moderate Concern	Low Concern
Tidal Wetlands	Nature Preserves	Non-tidal Wetlands
Freshwater Tidal Wetlands	Agricultural Land Conservation Easements	Highly Productive Soils
Coastal Impoundments		Agricultural Land Preservation Districts
Habitats of Conservation Concern		Upland Forest
Protected Lands Statewide		
USFWS Refuge Property		
Beaches and Dunes		

* Salinity Changes and Groundwater Effects evaluated but not ranked

Nature Preserves

- Exceptional habitats
  - ✓ 28 statewide
  - ✓ public and private land and water
  - ✓ Highest degree of protection within the state
- 34% to 43% of 4,700 acres potentially inundated
- Ranked as moderate



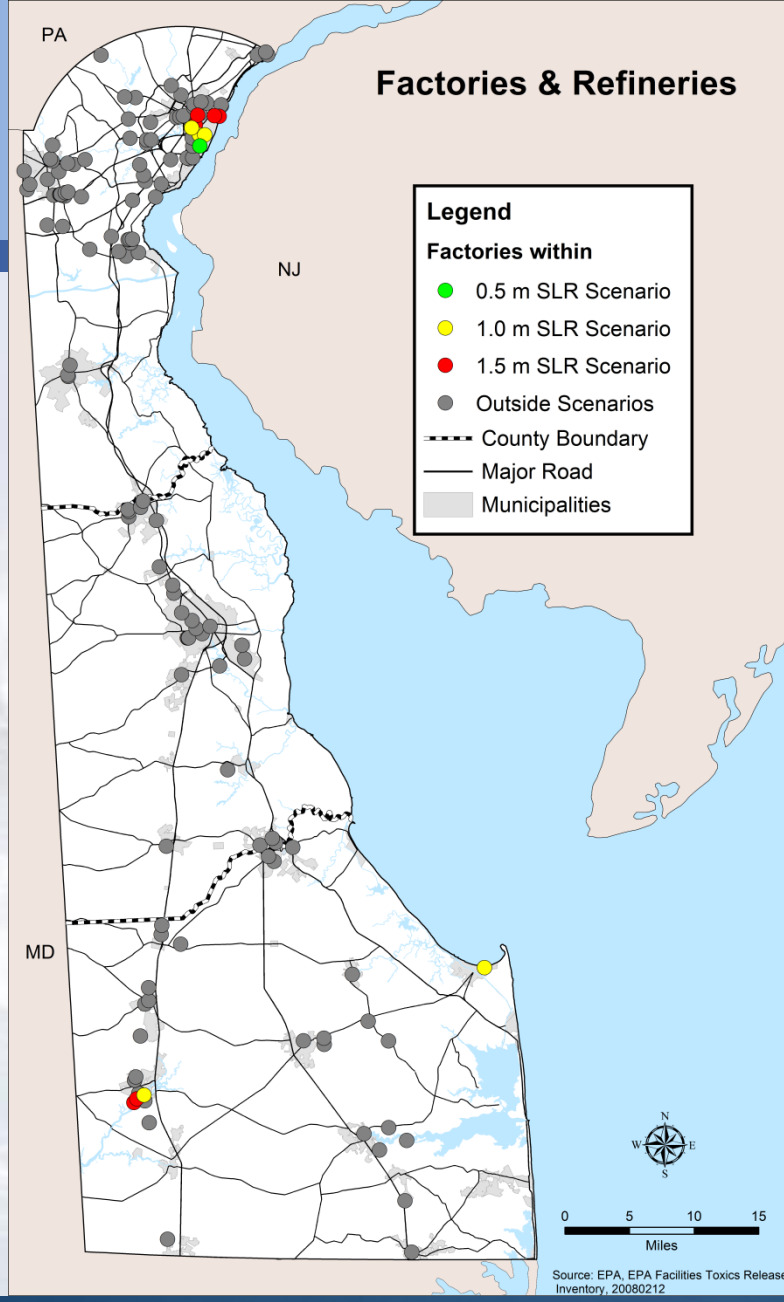
Vulnerability Assessment: Society & Economy Chapter

High Concern	Moderate Concern	Low Concern
Heavy Industrial Areas	Residences	Businesses & Commercial Areas
Future Development Areas		Agriculture (production)
Tourism & Coastal Recreation		Industrial & Manufacturing facilities
		Historic Resources

** Social vulnerability not ranked but recognized as consideration in all of above*

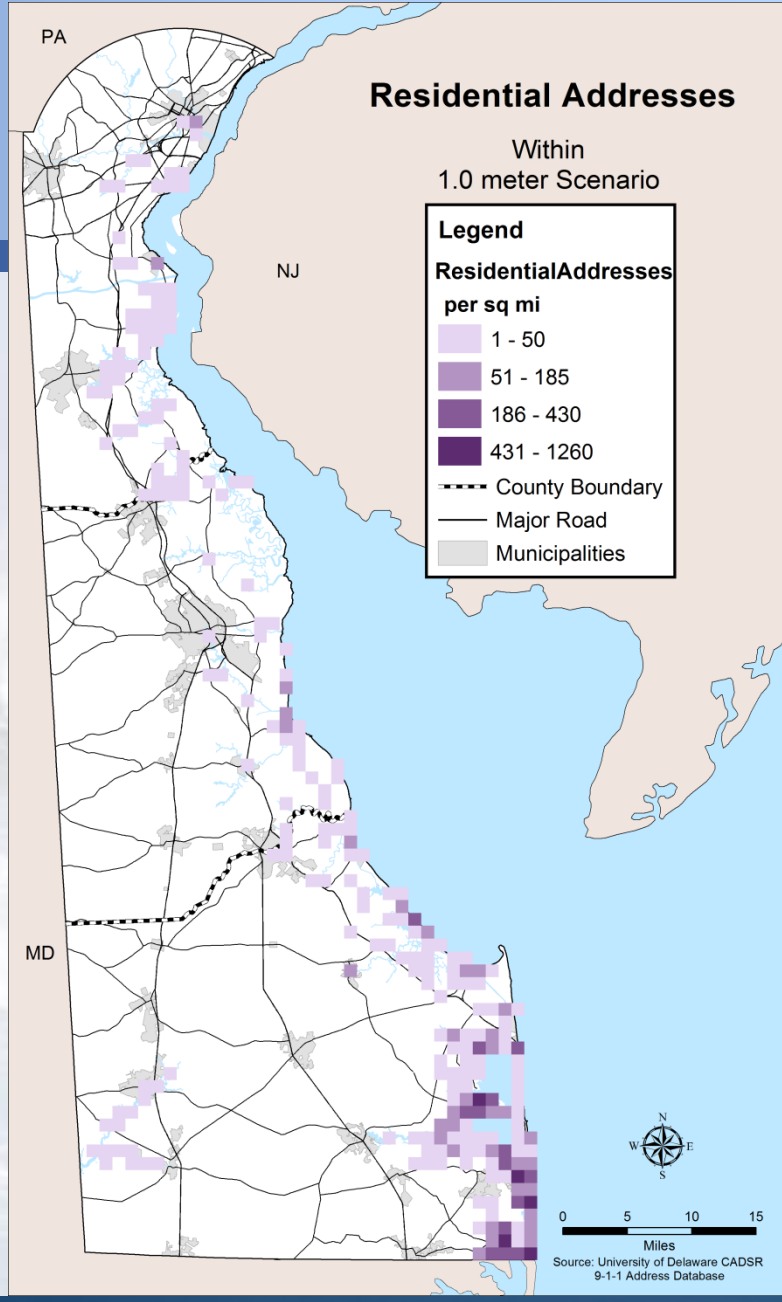
Industrial Areas

- 16%-25% of 4,000 acres permitted by CZA potentially inundated
  - ✓ Primary NCCo
- Impacts
  - ✓ Inundation of associated structures
  - ✓ Limited ability to relocate within state
- Statewide economic impact
- Ranked as high



Residential

- 1%-5% of 346,000 addresses potentially inundated
  - ✓ Up to 32% of manufactured homes in Sussex
  - ✓ Up to 13% (15,000) homes in Sussex
- Impacts
  - ✓ Flood damage, insurance costs, access, community
- Varying ability to adapt
- Primarily County level impact
- Ranked as moderate



Public Safety & Infrastructure Chapter

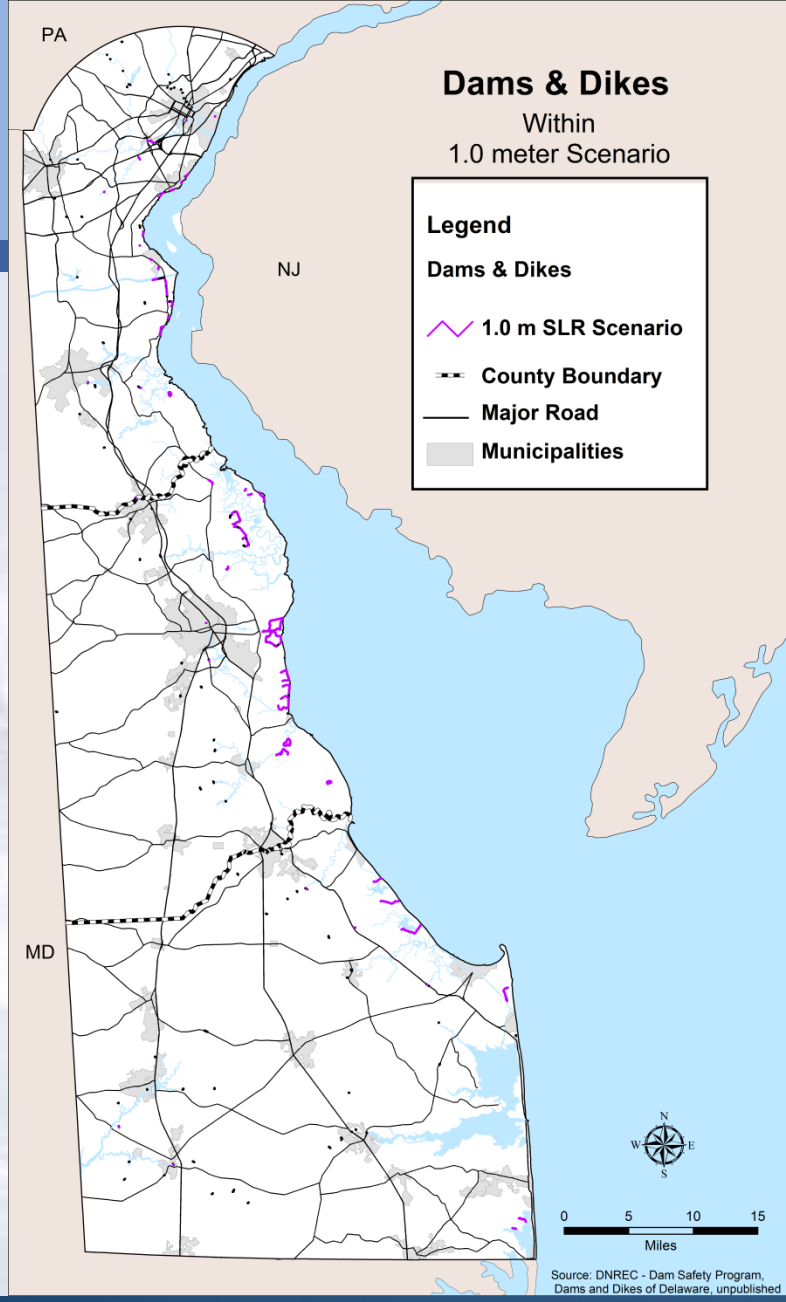
High Concern	Moderate Concern
Dams, Dikes & Levees	Septic Systems & Disposal Fields
Port of Wilmington	Landfills
Railroad Lines	Wastewater Facilities
Roads & Bridges	
Wells	
Evacuation Routes	

Public Safety & Infrastructure Chapter

Low Concern	Minimal Concern
Brownfields	Adult & Child Care Facilities
Salvage Yards	Cemeteries
Underground Storage Tanks	Schools
SIRS Contaminated Sites	Leaking Underground Storage Tanks
Underground Pipeline Utilities	DART Bus Routes & Stops
	Navigation Aids
	Public Boat Ramps & Piers
	Emergency Services

Dams & Dikes

- 39% - 78% of 50 miles of dams and dikes potentially overtopped statewide.
- Protects people, property, and habitat
- Ranked as high

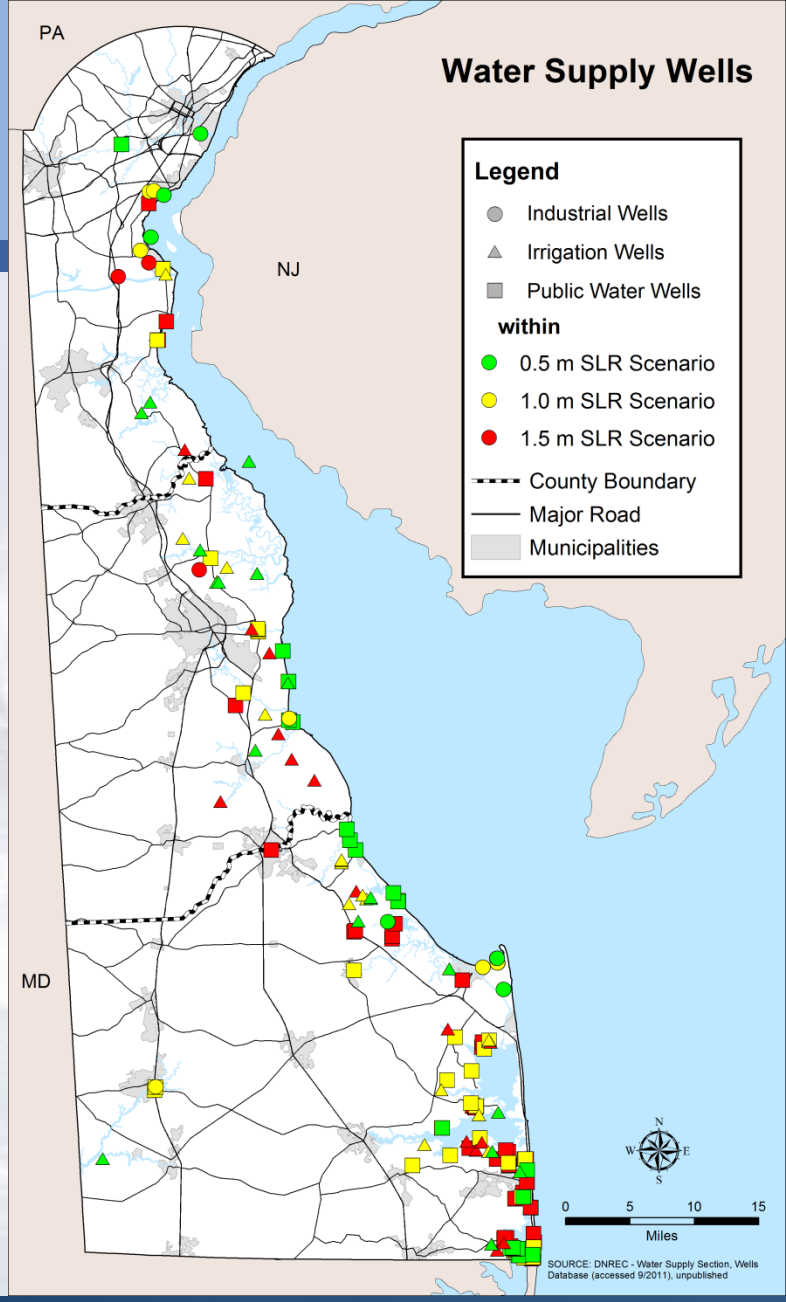


Port of Wilmington

- 36% - 73% potentially inundated.
- Nation's leading gateway for imports of:
  - ✓ Fresh fruit
  - ✓ Juice concentrate
  - ✓ One of the world's largest banana hubs
- State/regional/national economic impact
- Ranked as high

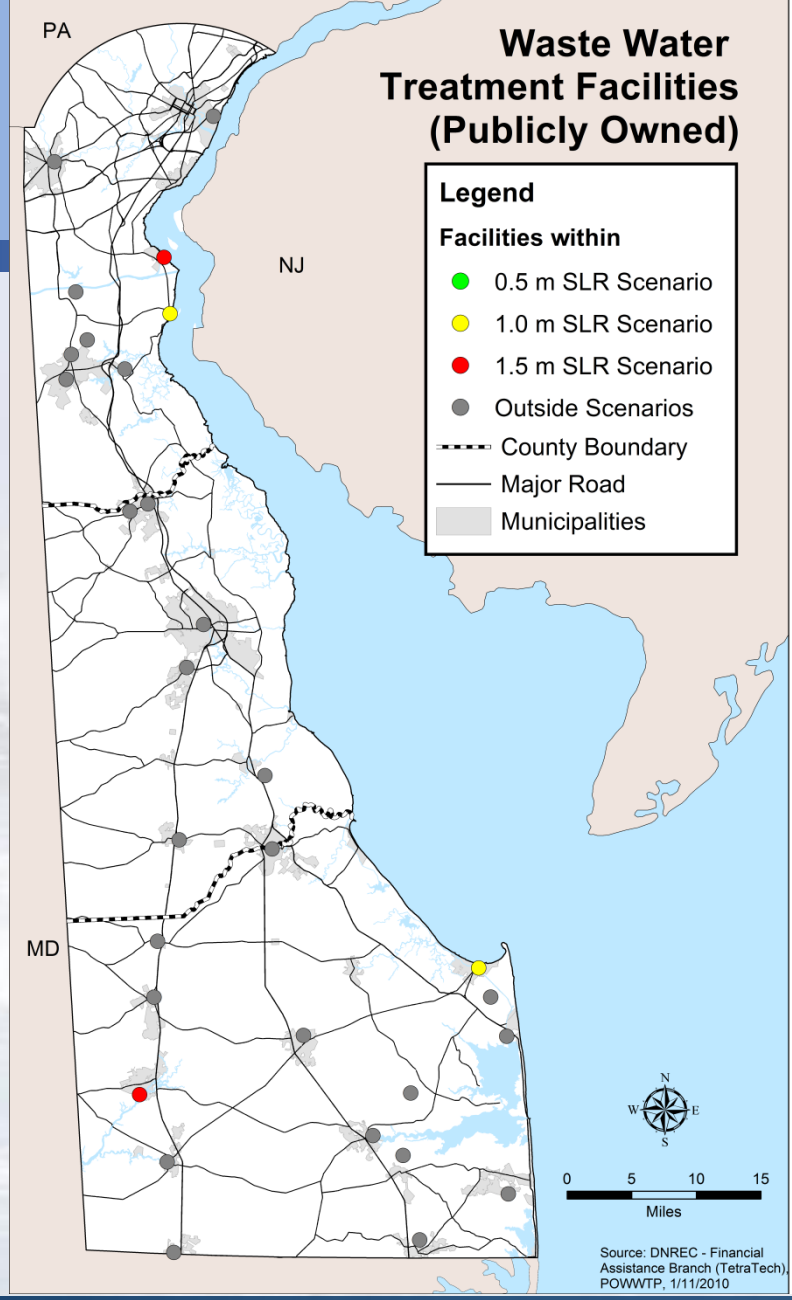
Wells

- Potentially inundated
  - ✓ Domestic wells: 3% - 7%
  - ✓ Industrial wells: 3% - 7%
  - ✓ Irrigation wells: 1% - 2%
  - ✓ Public wells: 2% - 10%
- Water supply concerns
- Saltwater intrusion may impact inland wells
  - ✓ Statewide concern
- Ranked as high



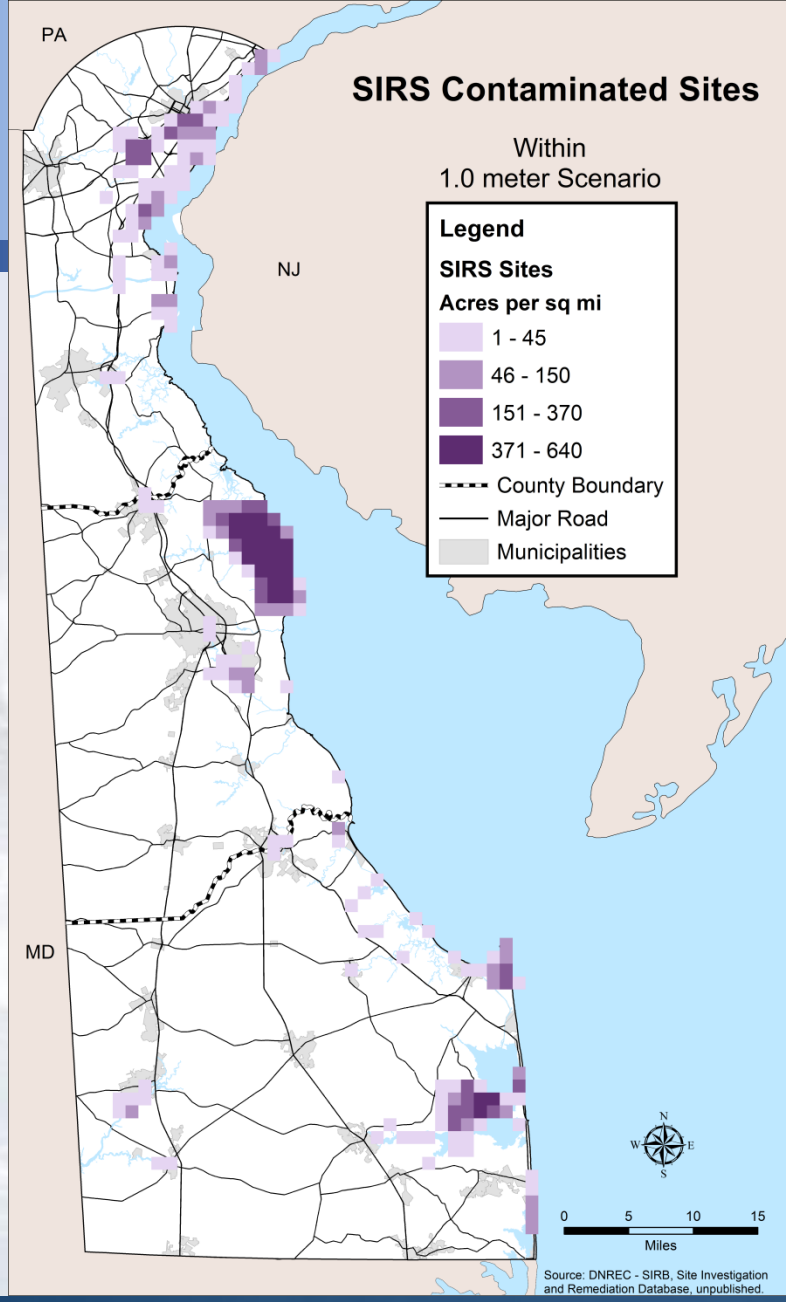
Wastewater Facilities

- Potentially inundated
  - ✓ Sewer pumping stations: 7% - 21%
  - ✓ Spray irrigation fields: 0% - 17%
  - ✓ Treatment facilities: 0% - 13%
- Facilities service a large number of people
- Functionality concern before inundation
- Ranked as moderate



SIRS Contaminated Sites

- 41% - 54% of 60,000 acres potentially inundated
- 33% - 44% of 785 sites
- Exposure focused in:
  - ✓ Wilmington region
  - ✓ Bombay Hook
  - ✓ Inland Bays
- Potential for contaminant release
- Ranked as low



HSIP & other Federal Data sources

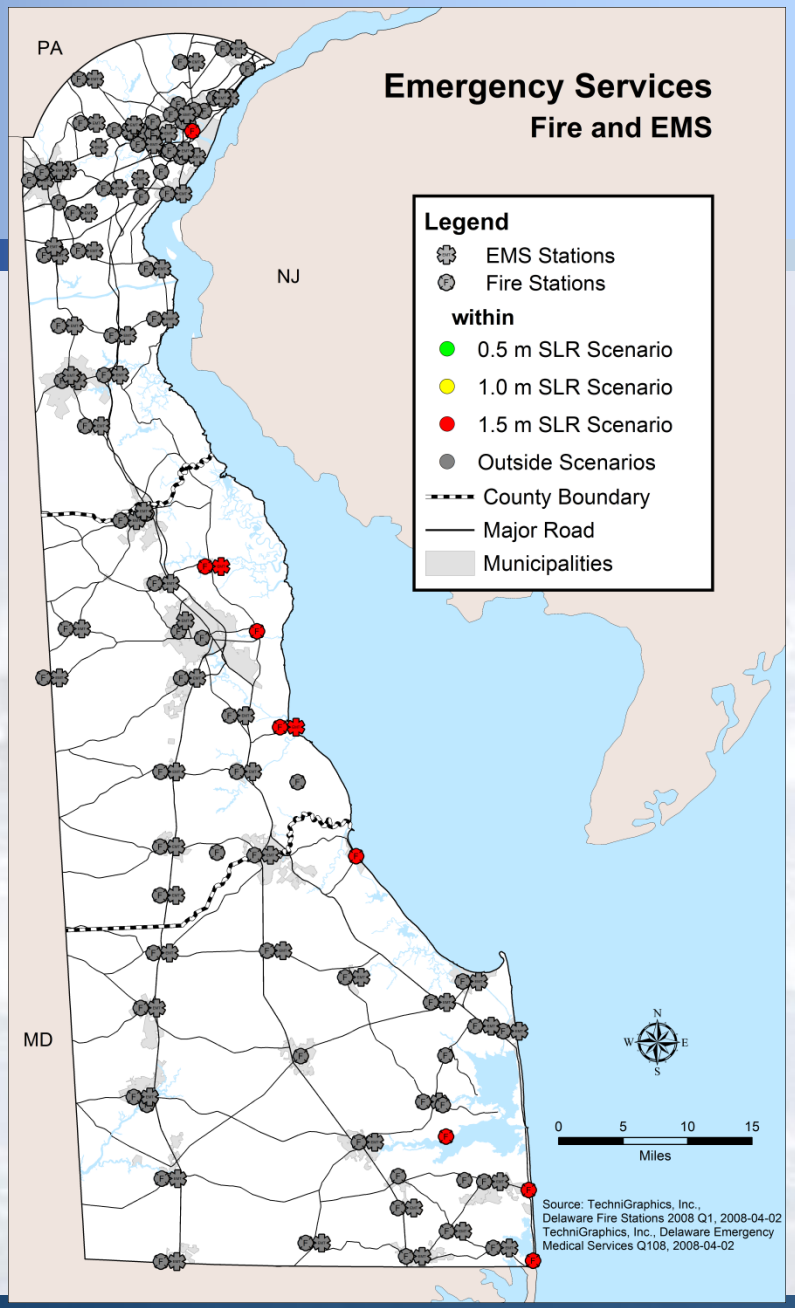
No Impacts

- ✓ Corrections
- ✓ Airports
- ✓ Transit Stations

Public Safety and Infrastructure Layers Used in Analysis	Workgroup Requesting Data			Source Notes
	PS&I	S&E	NR	
Fire and Rescue stations	X	X		TechniGraphics, Inc., Delaware Fire Stations 2008 Q1, 2008-04-02
Police stations	X	X		Department of Homeland Security (Technigraphics), Delaware Law Enforcement 2009 Q4, 20091218
Airports	X			HSIP Freedom (Department of Homeland Security); Del. Dept. of Transportation - Aviation
Railroads - Stations/Lines/Holding areas	X			HSIP Freedom (Department of Homeland Security)
Pipelines	X			DOT-PHMSA-National Pipeline management System
Navigation Aids	X			HSIP Freedom (Department of Homeland Security)
Correctional Facilities	X			TechniGraphics, Inc., Delaware Correctional Institutions 2007 Q4, 2007-11-05

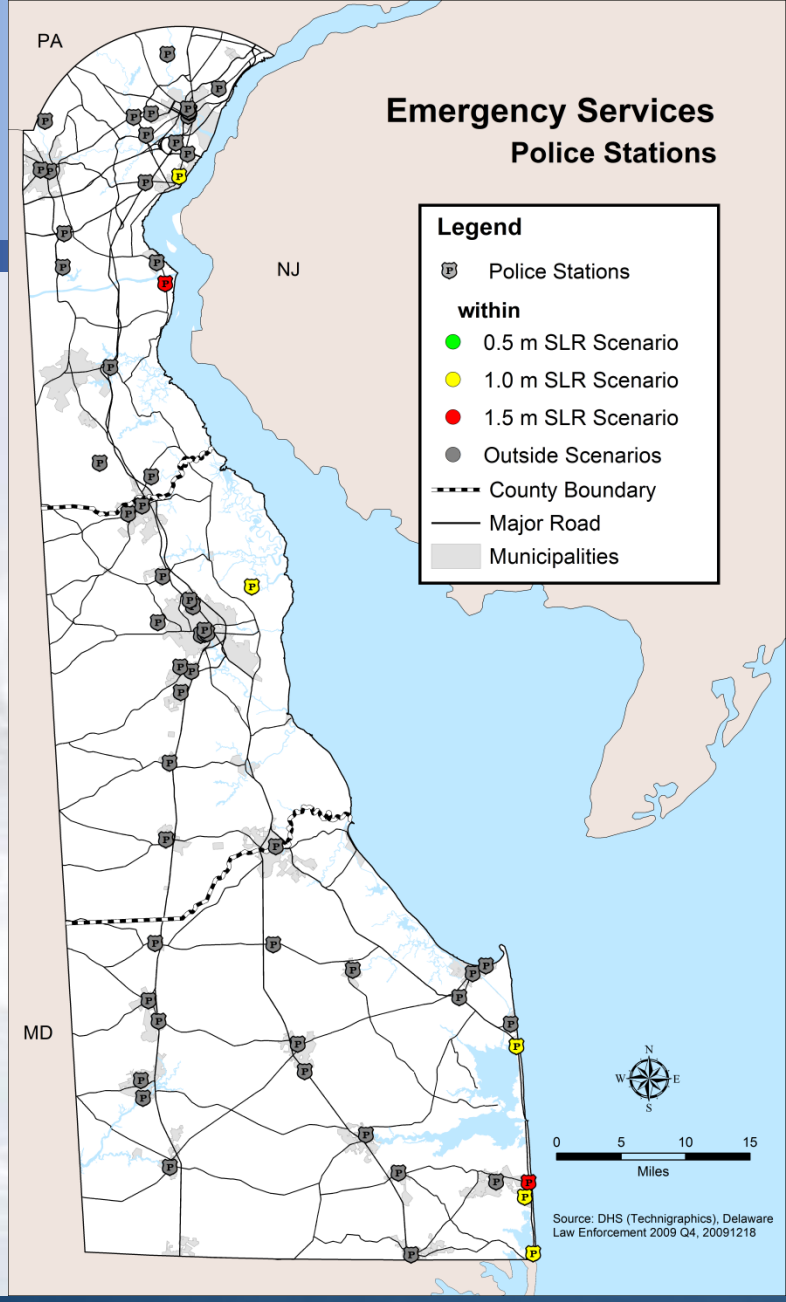
Fire and Rescue Stations

- At 1.5 meters, 8 Fire Stations and 2 EMS Stations.
- Ranked Minimal Concern



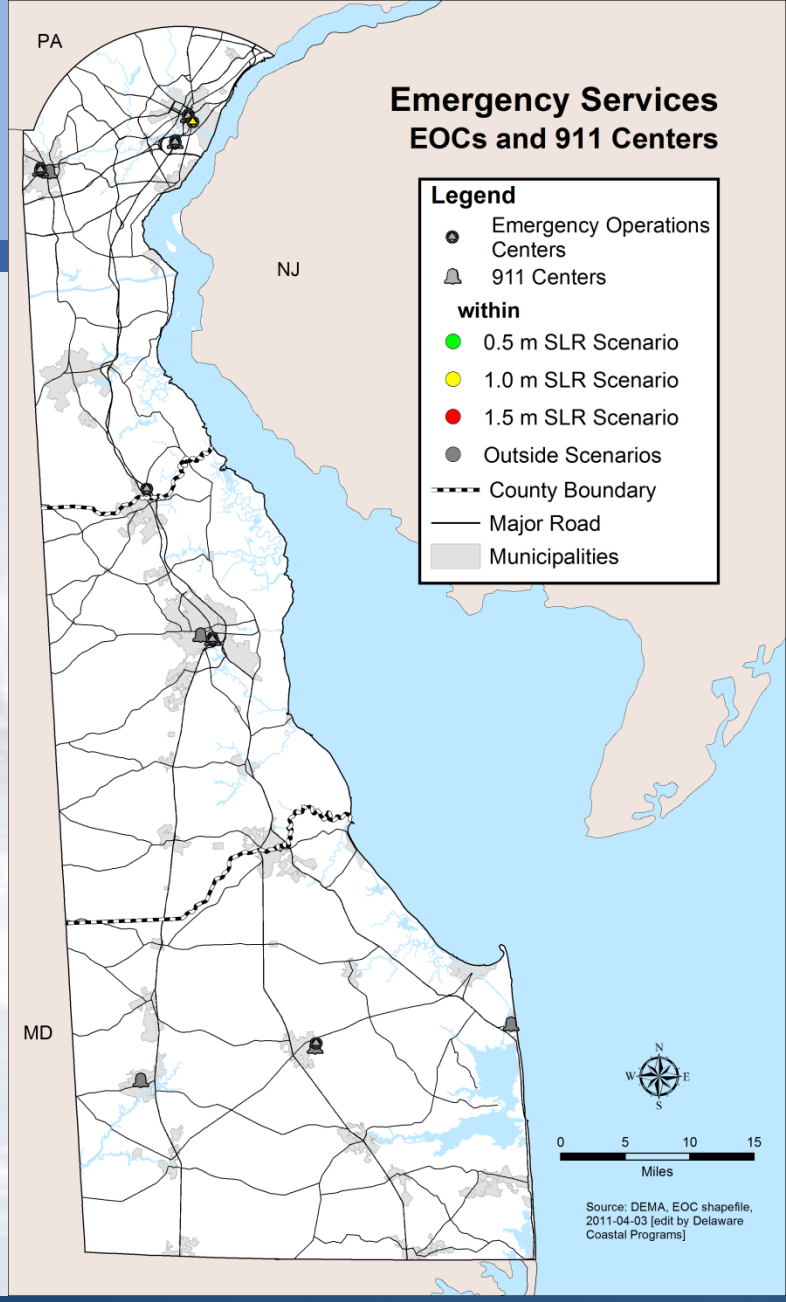
Police Stations

- 3 at 1 meter and 5 at 1.5 meters
- Most impact in coastal Sussex



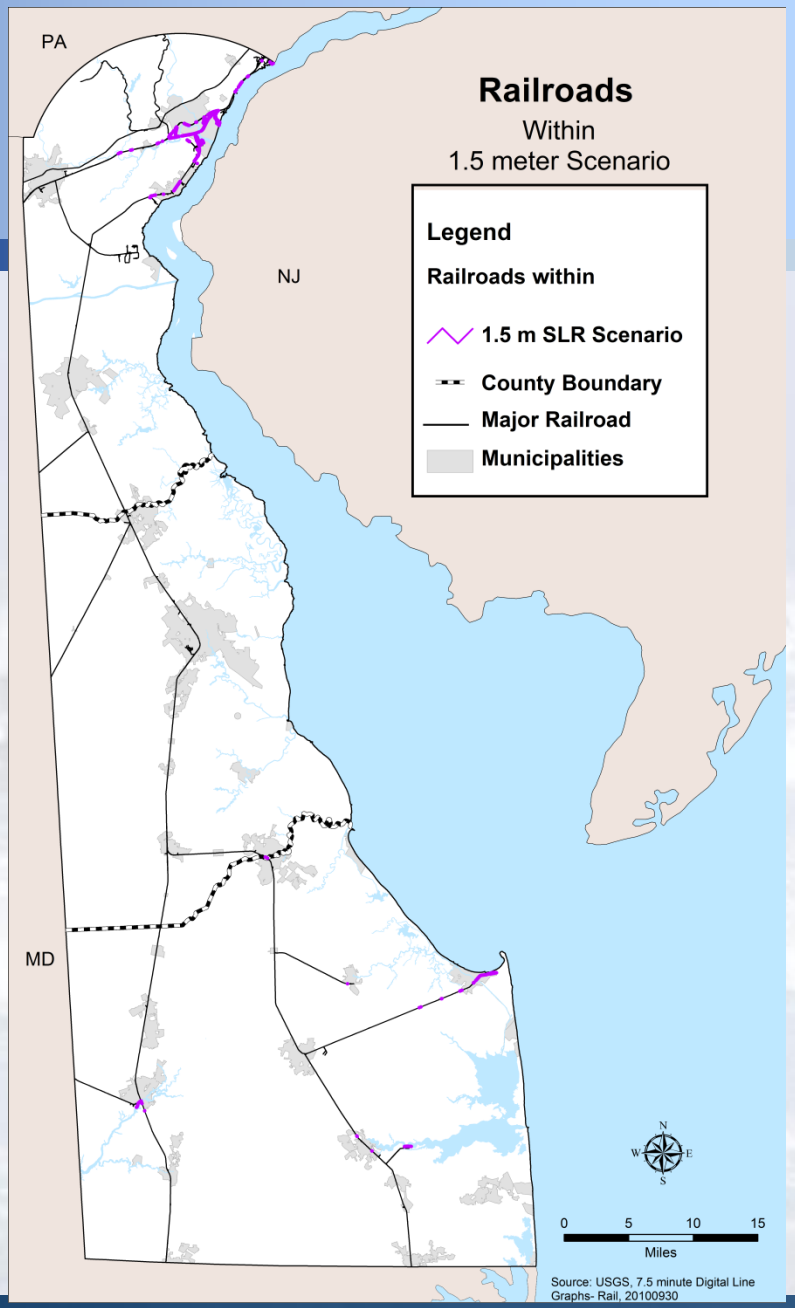
Emergency Operations and 911 Centers

- One EOC will be affected, no PSAPs
- New Wilmington EOC being constructed in the flood plain area
- Allowed because will be elevated above BFE but no accounting for SLR



Railroads

- 2-6% of State's rail lines could be inundated.
- Concentrated to New Castle County
- Impact to Amtrak line could affect entire Northeast Corridor.
- High concern



Pipelines

Pipelines (Sensitive Data)

County	Total Miles				Percent of Total Inundated		
		0.50m	1.0m	1.5m	0.50m	1.0m	1.5m
State	347	14	17	20	4%	5%	6%
New Castle	162	11	13	15	7%	8%	9%
Kent	100	3	4	5	3%	4%	5%
Sussex	84	0	0	0	0%	0%	1%

Source: National Pipeline Mapping System, U.S. Dept. of Transportation - Pipeline and Hazardous Materials Safety Administration, 20110712

- Not mapped
- Major supply lines not affected
- Low concern

Navigation Aids

County	Total Number	Number Inundated			Percent of Total Inundated		
		0.5 m	1.0 m	1.5 m	0.5 m	1.0 m	1.5 m
State	456	456	456	456	100%	100%	100%
New Castle	287	287	287	287	100%	100%	100%
Kent	62	62	62	62	100%	100%	100%
Sussex	107	107	107	107	100%	100%	100%

Source: Department of Homeland Security, HSIP Freedom, 2011.

- Easily adjusted for increased water levels
- Minimal concern

Next Steps for DNREC

- Continue to implement DNREC's SLR Policy
- Exploit opportunities to increase resiliency in projects and programs
- Use this vulnerability assessment!
  - ✓ Site or program specific assessments

Next Steps for SLRAC

- Draft adaptation strategies/options (now)
- Public engagement (February. 2013)
- Draft Adaptation Plan (April 2013)
- Final Recommendations and Adaptation Plan to Secretary (July 2013)

Thank You

For more information:

http://de.gov/slrva

http://de.gov/slradvisorycommittee

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